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ABSTRACT

A follow-up study was conducted of summer school programs in Ann Arbor, Michigan, which provided remedial instruction for 378 elementary school students two or more grade levels deficient in reading and/or mathematics achievement. Priority was given to Title I students. Major program elements included small teacher/pupil ratio; relaxed atmosphere; learning activities selected to meet individual needs; frequent diagnosis of pupil instructional needs; and varied activities to maintain pupil interest. Questionnaire responses from teaching and non-teaching staff, parents, and students indicated positive reactions to the program. Pre- and post-test differences indicated that a majority of students had achievement gains. The lowest gain scores were shown by first graders. Students absent two days or less had greater gains than those absent more than two days. Title I students did not have as impressive gains as non-Title I students. Students who attended two years had particularly good gains in reading comprehension. There was a preliminary indication that students attending summer school had achievement gains or less regression than students not attending summer school. (Author/MH)

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Evaluation of a Successful Remedial Summer School Program

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I. Introduction

In 1977 the Ann Arbor Public Schools initiated a Summer School program for elementary students needing remedial assistance in reading and mathematics. The primary focus of the program was to provide more individualized attention to the specific needs of students two or more grade levels behind in achievement. General funds were to provide most of the monies with supplementary assistance from Title I funds. Students were to be selected from all elementary schools in the district with high priority to be given to Title I students and to students who would show promise of benefiting from such additional work.

The program was implemented and received generally favorable acceptance from the Board of Education, administration, faculty, students, and community. Minor revisions in the model were made for 1978 and a variety of selection, instruction, administration, and evaluation changes were completed. This paper will describe the 1978 Summer School program and will provide evaluative data regarding various aspects of that program.

More specifically the major objectives of this paper are:

1. To describe a remedial elementary summer school program in reading and mathematics for students two or more grade levels behind in achievement.

2. To evaluate the effectiveness of the elementary summer school program using student achievement and assessment input from students, parents, and staff.

3. To recommend effective remedial elementary summer school procedures to other school districts.

II. Description of Summer School Program

Students. When developing the program for Summer School it had been agreed that student/teacher ratio should be kept low and that a limited number of sites should be utilized. Three building sites were selected from different areas of the school district with individual building attendance areas generally assigned by geographical region. Each of the three attendance areas included students with a variety of family incomes, racial makeup, and educational background. Two sites had an attendance limit of 135 children (8 classes) and one site had an attendance limit of 118 children (7 classes). Class size was to be limited to a maximum of 17 students.

Because the enrollment was to be limited to less than five per cent of the students in grades 16 in Ann Arbor private and public schools, a selection process was developed and criteria were established for pupil selection. The basic criteria for any child to be considered included (1) referral by the academic-year building and (2) a commitment by the student and parent that attendance would be regular. Beyond that a three-level priority was developed based on need and intent:

1. First priority--child received services from Title I personnel during the 1977-78 academic year.

2. Second priority--child two or more grade levels behind in reading and/or mathematics based on teacher, teacher consultant, principal, and/or language arts consultant recommendation or child recommended for Title I services but not being seen during the academic year.

3. Third priority--child behind grade level in reading and/or mathematics achievement but less than two grade levels behind.

The initial screening process was conducted by each elementary building staff in the district. Classroom teachers, teacher consultants, and principals were asked to recommend students who would benefit from the remedial program. All students receiving Title I services in either private or public schools were to be referred. A referral form was to be completed for each student giving information about the student, reasons for referral, and suggestions for instruction if selected for attendance.

Once the referral was made, the parent of each child was sent a letter asking for permission for the child to attend if selected. Because the enrollment was to be limited, no student could be considered for selection without parental permission. Parents were to understand that if their child was absent more than three days without an excuse of illness, the child would be dropped from the program and replaced by a student on the waiting list.

As referral forms and parental permission forms were completed, each building principal was asked to evaluate each child for possible selection. The principal was to consider level of parental commitment and the probability of regular attendance as well as indicating the child's priority ranking. This initial building screening phase was to be completed by May 15.

The referral forms and permission forms were forwarded to the Director of Summer School and a master list of students was recorded for selection. From this master list the Director and Community Liaison selected students according to the previously established criteria. Parents of each child were notified by June 1 of (a) acceptance for the Summer School program, (b) placement on a waiting list for possible acceptance at a later date, or (c) non-acceptance of the program.

Students within walking distance of their Summer School attendance site (1½ miles or less) were asked to walk to school. Those outside that radius were bussed. A schedule was prepared by Transportation Services and was distributed to parents. For safety and attendance purposes each bus was assigned a CETA person and/or a cadet to aid the driver.

Class lists were drawn up with attempts to balance the classes by race, sex, and academic year building. Some classes consisted of a single grade level and some combination grade classes were established. Table 1 shows the distribution of students selected for attendance by building, grade level, and Title I or non-Title I. The Title I distribution of students originally selected represented 46.8% of the Summer School students. Of the 201 students in Ann Arbor (Grades 1-6) who received Title I services during 1977-78, 185 (92.0%) were accepted for attendance during Summer School. It should be noted that the percentage of Title I students in actual attendance was lower than the original selection as some decided not to attend and the replacements on the waiting list were all non-Title I students.

Table 1

Summer School Students Selected for Attendance
by Building, Grade Level, and Title I/Non-Title I

	Grades						
	1	2	3	4	5	6	Total
Site A							
Title I	8	5	9	4	11	11	48
Non-Title I	5	24	18	13	12	4	76
							(124)
Site B							
Title I	26	13	15	13	11	5	83
Non-Title I	6	16	13	6	13	3	57
							(140)
Site C							
Title I	13	12	4	12	7	6	54
Non-Title I	20	5	15	17	12	8	77
							(131)
Total							
Title I	47	30	28	29	29	22	185
Non-Title I	31	45	46	36	37	15	210
	(78)	(75)	(74)	(65)	(66)	(37)	(395)

Staffing. In order to provide as much individual attention as possible for each child, the program was established with small classes (maximum of 17 pupils per class). In addition, a differentiated staffing pattern was utilized in assigning teaching responsibilities. A teaching team was assigned to each class and consisted of a certified head teacher, an educational assistant, and a cadet. Responsibilities and selection of each group is described as follows:

a. Teachers--The head teachers were all certified elementary teachers from the Ann Arbor Public Schools. Many more applications were received than there were teaching assignments. Fourteen of the twenty-three positions were filled by teachers from the previous Summer School program. The others were chosen from the pool of applicants. Responsibilities of the teachers included setting goals for the pupils, selecting and developing activities and materials, reporting to parents, and coordinating and directing the work of the other instructional personnel assigned to the class.

b. Educational Assistants--The duties of the educational assistant included testing, monitoring pupil activities and progress, working with individuals and small groups of children, and aiding the teacher with general classroom instructional activities. Six of those chosen for this role served as an educational assistant in the 1977-78 Title I academic year program in which they had performed similar duties. Ten of those selected had been educational assistants the previous summer and fifteen of the group were certified teachers. These positions were filled from over one hundred applicants representing substitute teachers, recent university graduates, and former teachers.

c. Cadets--The responsibilities of the cadets included working individually with students (especially Title I children), making games, collecting materials, correcting papers, general classroom management activities, and other duties as directed by the teacher. This group was made up of recently certified teachers, college students majoring in education, high school students, and community people with an interest in education. Thirteen were returnees from the previous year's program.

Special attention was given to the matching of teachers with educational assistants and cadets in an attempt to establish a team which could work together. Placement of teaching teams at the three sites attempted to provide a balance of (1) males and females, (2) experience in working with children below grade level, (3) race, and (4) educational background. General satisfaction with the teams and their assignments was observed during the session.

In addition to the teaching team, six of the classrooms were assigned student teachers from Eastern Michigan University. Each of these students had had previous teaching experience and needed student teaching credit for recertification or to qualify for an additional endorsement on their original certificate. The previous experiences of these students allowed them to be useful and supportive as part of the teaching team in the classroom.

The CETA program in Ann Arbor provided one junior or senior high school student from their summer program for each classroom. The responsibilities of

these CETA students were to tutor individual pupils and to assist the teacher with general classroom activities.

Additional administrative and support personnel consisted of the following:

a. Director--The director of the Summer School program was an elementary building principal who was selected by the Associate Superintendent of Curriculum and Instruction. This person had had previous experience working in Title I summer school programs and had been the 1977 Summer School Director. Responsibilities of the Director included hiring staff, administering the three building sites, planning and implementing in-service activities, conducting staff meetings, and keeping the budget. The Director visited each building site each day and conducted three different building staff meetings each Friday.

b. Community Liaison--This position was established to assist the Director in administering the program. Specific duties included coordinating the student selection process and coordinating the testing which was needed during the summer. Additional responsibilities were assigned by the Director and included visiting each site daily to assist with instructional problems and with behavior and/or attendance problems. The person selected to fulfill this role was a certified elementary teacher from the Ann Arbor Public Schools and was the same person who served in this capacity during the 1977 program.

c. Secretaries--A secretary was assigned to each building site. These people assumed responsibility for ordering supplies and materials, keeping the payroll, serving as building head when the Director and Community Liaison were not at the site, and keeping in touch with the business processes of such a summer program. The people selected for these roles were secretaries from three Ann Arbor elementary schools.

d. CETA personnel--One CETA person was assigned to each building with the responsibilities of checking on attendance, helping monitor pupil behavior on the busses, and assisting the office and administrative staff. The three people involved in these activities had backgrounds in social work or teaching. Many telephone calls and home visits were made by these people to discuss absences or problems at school.

The total teaching and support staff totaled over 100 people. This was consistent with the aims of the program and provided for a great deal of individual pupil attention and a relaxed and stimulating setting to aid motivation.

Instructional program. In order to maintain pupil interest and attendance, Summer School was directed towards providing a somewhat different learning experience for the students. Many of the students had not been relating to the program of the academic year and a repeat of a similar instructional program during the summer would seem to have had little chance to be successful. A prescribed curriculum was not developed. Instead, teachers were told to be flexible and creative and to try to incorporate activities and learning experiences which would motivate children and aid their achievement. Immediate feedback, individual attention, many and varied activities, and a flexible approach were the key facets to be stressed.

The teachers were all Ann Arbor Public Schools teachers and, thus, were familiar with the philosophy and goals of the system. Development of individual programs included such approaches and activities as mini-centers, practice in small groups without use of dittos, varied uses of the Dolch words, games, skits/plays, cooking, skill instruction for individuals, quiet reading, making games, language encounters, creative writing, writing books, and walking or car trips.

Although there was no money for field trips, many of the teachers arranged short trips in the immediate vicinity of the school. Several resource people were invited to speak or demonstrate their skill for groups of children. These included a judo demonstration, a harp recital and presentation, and a general music program. These experiences were designed to provide pupil motivation.

Students were in attendance Monday through Thursday mornings, 9 a.m. to 12 noon. Fridays were reserved for staff meetings, inservice, planning, material preparation, report writing, and parent conferences. One staff meeting was held in early June to acquaint the teaching staff with the program goals, to distribute class lists and individual pupil information, and to request supplies and materials. The Thursday and Friday morning before Summer School began were spent in mathematics and language arts workshops which emphasized ideas and materials which would be appropriate for the summer program. Smaller workshop sessions were held on some Friday mornings, especially for the cadets, to design and construct new instructional materials.

The materials budget was limited to the purchase of supplies such as paper, pencils, crayons, rulers, paper clips, and tag board. No textbooks or workbooks could be purchased for the program. This forced teachers to be more creative and to develop new approaches for working with children. In addition to providing a more non-traditional instructional program for students, this aspect of the Summer School program provided valuable in-service for the participating professional staff of the district. Teachers were encouraged to bring materials from their own classroom or school and to make use of other material sources in the district such as the Instructional Materials Center and the Language Arts Center. Many kits, games, and teaching aids were borrowed from these sources.

During the 1977 Summer School program many teachers reported that children were attending school with little or no breakfast. Some of the teachers had supplied snacks for their students at the teacher's expense. For 1978 a nutrition break was incorporated for all children. Peanut butter, graham crackers, and juice were provided at a total cost of approximately 80¢ per child for the six-week period.

By the end of the first week of Summer School, each teacher had evaluated individual students and had set goals for each child for the session. The goals were recorded and distributed to the parents. A progress report was sent to each parent at the beginning of the fourth week and at the end of the six-week program. In addition to these written reports, teachers made telephone calls to parents, had conferences with parents at school, and made some home visits. Two of the buildings held an evening open house and the other building had a visitation day at the school.

Regular pupil attendance was of prime importance to the success of the program. The commitment of the student and parent to regular attendance was

needed to insure consistency and impact. The first step in maintaining pupil attendance was completed during the student selection process. A signed parental permission form was required for all pupils and on that form the parent agreed to have the child attend regularly. During the first week and one-half of Summer School, attendance was carefully checked for all students so vacancies could be filled from the waiting list. A letter was sent home to parents during the first few days of Summer School requesting a call to the school on days when the child would be absent. If no call was received, the school secretary or the CETA person called the home to determine the cause for non-attendance. Such an effort continued throughout the program and in some cases it was necessary for the CETA person to make a home visit to discuss attendance. No pupils from the waiting list were added after the second week.

Budget. The responsibility for the budget was divided between General Funds and Title I. A summary of the budget and actual costs appears in Table 2.

Table 2

Summer School Budget and Expenditures

	Budget		Expenditures	
Item Description	General Fund	Title I	General Fund	Title I
1. Salaries and fringes				
Director	2800		2800	
Community Liaison		2026		1571
Teachers	22460		23757	
Educational Assistants and Cadets		20312		17998
Secretaries	1245		1241	
2. Instructional supplies	3225		2131	
3. Local travel	225		104	
4. Pupil transportation	4500		2577	
Subtotals	34455 (60.7%)	22338 (39.3%)	32610 (62.5%)	19569 (37.5%)
Totals	56793		52179	

It can be seen that 62.5% of the expenditures came from General Funds and 37.5% from Title I monies. A saving of over 8% from the budgeted figures was realized. The total program cost $134.14 for each student enrolled.

III. Data Collection

There were two methods used to collect assessment information regarding the Summer School program. Questionnaires were used to elicit feedback information from parents, students, and staff. Pre- and post-test data provided information about pupil achievement.

Questionnaires. Four questionnaires were developed to gain information about the program. Each questionnaire was distributed during the last week of Summer School. The response rate for each questionnaire is shown in Table 3.

Table 3

Questionnaire Completion Rates

	Forms Returned	•	Forms Distributed	Completion Rate
Students	268		363	73.8%
Parents	167		290	57.6%
Non-Teaching Staff	9		9	100.0%
Teachers	22		23	95.7%
Educational Assistants	22		23	95.7%
Cadets	22		23	95.7%

Student questionnaires were read to those needing such assistance. Students were reminded to encourage their parents to complete the parent questionnaire. In one school, the CETA person called parents reminding them to complete the forms and indicating the importance of the information being gathered.

Except for the parent questionnaire which was new for 1978, each of the instruments used was a revision of the instrument used the previous summer. Each questionnaire was designed to provide data regarding various aspects of the program, the degree of success in providing academic improvement and motivation, and suggestions for program modification.

The results of the student questionnaire are shown in Table 4.

Table 4

Student Questionnaire Responses

QUESTION	RESPONSES		
	Yes	Sometimes	No
Did you attend summer school here last year?	57 (21.3%)		197 (73.5%)
Did you want to come to summer school?	153 (57.1%)		109 (40.7%)
Do you like summer school now?	135 (50.4%)	29 (10.8%)	91 (34.0%)
Do you like reading in regular school?	142 (53.0%)	49 (18.3%)	66 (24.6%)
Do you like reading in summer school?	146 (54.5%)	35 (13.1%)	75 (28.0%)
Do you like math in regular school?	161 (60.1%)	49 (18.3%)	53 (19.8%)
Do you like math in summer school?	172 (64.2%)	41 (15.3%)	52 (19.4%)
Do you think it is a good idea to have more than one teacher in your classroom like you do in summer school?	196 (73.1%)	40 (14.9%)	28 (10.4%)
Do you like your summer school teachers?	202 (75.4%)	15 (5.6%)	48 (17.9%)
Do you think you are getting more help with your work in summer school than in regular school?	166 (61.9%)	47 (17.5%)	47 (17.5%)
Do you think you have improved in reading during summer school?	183 (68.3%)	35 (13.1%)	41 (15.3%)
Do you think you have improved in math during summer school?	198 (73.9%)	30 (11.2%)	34 (12.7%)
Do your parents like you going to summer school?	241 (89.9%)	10 (3.7%)	14 (5.2%)
If there is a summer school next year would you like to come back?	107 (39.9%)	127 (47.4%)	28 (10.4%)
What grade were you in last school year?	1 - 47(17.5%), 2 - 57(21.2%), 3 - 44(16.4%) 4 - 48(17.9%), 5 - 45(16.8%), 6 - 24(9.0%)		
Which summer school do you go to now?	Site A - 93(34.7%) Site B - 105(39.2%) Site C - 70(26.1%)		

(Questionnaires returned: 268 (73.8%)

Even though 40.7% of the students preferred not attending Summer School and 34.0% indicated they did not like Summer School, the responses to other items were encouraging especially when considering those two responses. Reading and mathematics comparisons for Summer School and academic-year school were nearly the same indicating little improvement in general attitude towards those subject areas. But that is not surprising given the shortness of the summer program. And considering the fact that all of these students were deficient in achievement in these areas, it seems somewhat encouraging that only about 25% disliked reading and only about 20% disliked mathematics. There is some indication that students are not able to compare reading or mathematics in Summer School and academic-year school since the responses to questions seeking such information are nearly identical. The students appear to respond according to their general attitude towards the subject area rather than comparing Summer School to academic-year school.

Questions seeking information about the teaching staff and the individual attention elicited generally favorable responses. Only 10.4% of the students disliked having more than one teacher; 17.9% indicated dislike for their teachers. And nearly 80% of the students felt that they were getting more help during Summer School.

Responses to academic improvement questions were quite positive. Only 15.3% of the students felt they had not improved in reading and only 12.7% felt they had not improved in mathematics.

Students knew parents wanted them to attend Summer School (only 5.2% negative responses). Only 10.4% of the students indicated they would not like to attend Summer School another year. This response was particularly positive and probably reflects the overall assessment of the Summer School program by the students.

Open-ended questions at the end of the questionnaire sought student comments on what they liked best and least about Summer School. Over 75% of those responding liked math and/or reading. Other positive responses included comments about recess, treats, teachers, games, everything, and feeding the ducks. Negative responses were minimal and usually indicated a preference for playing all morning or sleeping later.

Table 5 shows the results of the staff questionnaires.

Table 5

Staff Questionnaire Responses

Question	Responses		Respondants: Non-Teaching Staff	Teachers	Educ. Assts.	Cadets
In which school did you work?	Site A		2 (22.2%)	7(31.8%)	6(27.3%)	6(27.3%)
	Site B		3 (33.3%)	8(36.4%)	8(36.4%)	7(31.8%)
	Site C		4 (44.4%)	7(31.8%)	8(36.4%)	8(36.4%)
Did you work in the Ann Arbor Summer School program last year?	Yes		4 (44.4%)	12(54.5%)	8(36.4%)	10(45.5%)
	No		5 (55.6%)	9(40.9%)	13(59.1%)	10(45.5%)
What were the key reasons you decided to work in Summer School? (Choose up to three responses.)	Money		8 (88.9%)	14(63.7%)	9(40.9%)	14(63.7%)
	Stimulation		1 (11.1%)	2(9.1%)	6(27.3%)	7(31.8%)
	Something different		4 (44.4%)	8(36.4%)	2(9.1%)	10(45.5%)
	Additional experience		1 (11.1%)	15(68.2%)	18(81.8%)	8(36.4%)
	Enjoyment		6 (66.7%)	7(31.8%)	14(63.7%)	9(40.9%)
	Commitment		1 (11.1%)	4(18.2%)	4(18.2%)	1(4.5%)
	Challenge		0 (0%)	12(54.5%)	7(31.8%)	9(40.9%)
	Other		0 (0%)	0(0%)	0(0%)	0(0%)
Do you think Summer School should continue in 1979?	Yes		9 (100%)	21(95.5%)	22(100%)	22(100%)
	No		0 (0%)	0(0%)	0(0%)	0(0%)
In terms of scheduling, which do you recommend?	Length	6 weeks	3 (33.3%)	15(68.2%)	13(59.1%)	7(31.8%)
		7 weeks	4 (44.4%)	2(9.1%)	5(22.7%)	7(31.8%)
		8 weeks	2 (22.2%)	4(18.2%)	4(18.2%)	8(36.4%)
	Time	8:30-11:30	1 (11.1%)	5(22.7%)	3(13.6%)	1(4.5%)
		8:30-12:00	3 (33.3%)	0(0%)	0(0%)	2(9.1%)
		9:00-12:00	4 (44.4%)	16(72.7%)	18(81.8%)	18(81.8%)
		1:00-4:00	0 (0%)	0(0%)	0(0%)	1(4.5%)
	Days	M,T,W,Th	7 (77.8%)	20(90.1%)	18(81.8%)	19(86.4%)
		M,T,Th,F	1 (11.1%)	0(0%)	0(0%)	0(0%)
		T,W,Th,F	0 (0%)	1(4.5%)	3(13.6%)	2(9.1%)

Table 5

Staff Questionnaire Responses (pg.2)

Question	Responses	Respondants: Non-Teaching Staff	Teachers	Educ. Assts.	Cadets
Please indicate your perception of the following:					
Student attitudes & motivation	Excellent	3 (33.3%)	4(18.2%)	1(4.5%)	4(18.2%)
	Good	5 (55.6%)	8(36.4%)	13(59.1%)	11(50.0%)
	Average	1 (11.1%)	4(18.2%)	6(27.3%)	5(22.7%)
	Low	0 (0%)	3(13.6%)	0(0%)	2(9.1%)
Parental cooperation	Excellent	2 (22.2%)	4(18.2%)	2(9.1%)	4(18.2%)
	Good	4 (44.4%)	11(50.0%)	6(27.3%)	6(27.3%)
	Average	2 (22.2%)	5(22.7%)	10(45.5%)	7(31.8%)
	Low	0 (0%)	2(9.1%)	2(9.1%)	3(13.6%)
Administrative support	Excellent	5 (55.6%)	13(59.1%)	12(54.5%)	9(40.9%)
	Good	2 (22.2%)	8(36.4%)	8(36.4%)	8(36.4%)
	Average	0 (0%)	1(4.5%)	0(0%)	3(13.6%)
	Low	0 (0%)	0(0%)	0(0%)	0(0%)
Supervision of instructional activities	Excellent		8(36.4%)	8(36.4%)	10(45.5%)
	Good		8(36.4%)	8(36.4%)	0(0%)
	Average		2(9.1%)	3(13.6%)	1(4.5%)
	Low		0(0%)	0(0%)	1(4.5%)
Would you be interested in teaching Summer School nex year?	Yes	8 (88.9%)	20(90.1%)	22(100%)	20(90.1%)
	No	1 (11.1%)	0(0%)	0(0%)	2(9.1%)
What inputs, if any, do you think should be made by the sending school team in order to help in planning the summer school program?	Nothing--do own assessment		0(0%)	0(0%)	1(4.5%)
	Pre-testing		16(72.7%)	20(90.1%)	10(45.5%)
	Skills check-list		18(81.8%)	21(95.5%)	11(50.0%)
	Behavioral information		10(45.5%)	11(50.0%)	6(27.3%)
	Written narrative		13(59.1%)	13(59.1%)	10(45.5%)
	More Parent Committment		9(40.9%)	5(22.7%)	4(18.2%)
	Other		3(13.6%)	2(9.1%)	0(0%)

Table 5

Staff Questionnaire Responses (pg. 3)

Question	Responses	Non-Teaching Staff	Respondants: Teachers	Respondants: Educ. Assts.	Respondants: Cadets
Are you a teacher or an aide during the regular school year?	Teacher		21(95.5%)	5(22.7%)	0(0%)
	Aide		0(0%)	11(50.0%)	1(4.5%)
	Other		1(4.5%)	3(13.6%)	10(45.5%)
Do you enjoy summer teaching more than your work during the regular year?	No		5(22.7%)	7(31.8%)	0(0%)
	Sometimes		6(27.3%)	3(13.6%)	2(9.1%)
	About same		3(13.6%)	5(22.7%)	4(18.2%)
	Yes		5(22.7%)	4(18.2%)	7(31.8%)
Compare these things in Summer School with regular school:					
Teaching Materials	Far better in S.S.		3(13.6%)	2(9.1%)	1(4.5%)
	Better in S.S.		2(9.1%)	3(13.6%)	4(18.2%)
	Worse in S.S.		9(40.9%)	9(40.9%)	4(18.2%)
	Far worse in S.S.		4(18.2%)	3(13.6%)	0(0%)
Class size	Far better in S.S.		16(72.7%)	9(40.9%)	7(31.8%)
	Better in S.S.		3(13.6%)	6(27.3%)	4(18.2%)
	Worse in S.S.		1(4.5%)	0(0%)	0(0%)
	Far worse in S.S.		0(0%)	0(0%)	0(0%)
Available support systems	Far better in S.S.		3(13.6%)	2(9.1%)	2(9.1%)
	Better in S.S.		4(18.2%)	5(22.7%)	4(18.2%)
	Worse in S.S.		8(36.4%)	7(31.8%)	2(9.1%)
	Far worse in S.S.		1(4.5%)	0(0%)	0(0%)
Planning time	Far better in S.S.		12(54.5%)	6(27.3%)	2(9.1%)
	Better in S.S.		7(31.8%)	8(36.4%)	3(13.6%)
	Worse in S.S.		1(4.5%)	3(13.6%)	3(13.6%)
	Far worse in S.S.		1(4.5%)	1(4.5%)	1(4.5%)
In-service program	Far better in S.S.		1(4.5%)	2(9.1%)	1(4.5%)
	Better in S.S.		9(40.9%)	6(27.3%)	3(13.6%)
	Worse in S.S.		2(9.1%)	2(9.1%)	2(9.1%)
	Far worse in S.S.		2(9.1%)	1(4.5%)	2(9.1%)

Table 5

Staff Questionnaire Responses (pg.4)

Question	Responses	Respondants: Non-Teaching Staff	Teachers	Educ. Assts.	Cadets
Compare these things in Summer School with regular school (con't):					
Record keeping	Far better in S.S.		2(9.1%)	2(9.1%)	3(13.6%)
	Better in S.S.		10(45.5%)	5(22.7%)	4(18.2%)
	Worse in S.S.		5(22.7%)	4(18.2%)	2(9.1%)
	Far worse in S.S.		0(0%)	0(0%)	0(0%)
Teamwork	Far better in S.S.		8(36.4%)	9(40.9%)	5(22.7%)
	Better in S.S.		10(45.5%)	6(27.3%)	5(22.7%)
	Worse in S.S.		1(4.5%)	0(0%)	0(0%)
	Far worse in S.S.		0(0%)	0(0%)	0(0%)
Pressure	Far better in S.S.		4(18.2%)	4(18.2%)	3(13.6%)
	Better in S.S.		9(40.9%)	7(31.8%)	3(13.6%)
	Worse in S.S.		2(9.1%)	1(4.5%)	1(4.5%)
	Far worse in S.S.		0(0%)	0(0%)	0(0%)

(Questionnaires returned: Non-Teaching Staff 9 (100%), Teachers 22 (95.7%), Educational Assistants 22 (95.7%), Cadets 22 (95.7%))

The responses from these questionnaires indicated no one on the staff felt Summer School should not be continued another year. Scheduling questions revealed general agreement with the current schedule, especially the time (9 a.m. - 12 noon) and days (Monday through Thursday). The six-week session was preferred by teachers and educational assistants, but the non-teaching staff and cadets had slight preferences for a seven-week or eight-week session. Administrative support and supervision of instructional activities were rated excellent to good by all staff groups. Student attitudes and motivation were rated good by all staff groups and parental cooperation was rated good or average. Over 90% of all teaching personnel and 88.9% of the non-teaching personnel expressed interest in participating in the next Summer School. Staff responses were generally quite positive about the structure and administrative aspects of the Summer School program and pointed to few changes needed in these areas for future summer programs.

The teaching staff expressed interest in having the academic-year school involved in preparing skills check-lists, written narratives, and behavioral information for students. They also wanted the pre-testing done by the academic-year school and teachers expressed interest in having the academic-year school seek more parental commitment to the program.

When comparing Summer School to academic-year school, 50% of the teachers, 31.8% of the educational assistants, and 40.9% of the cadets enjoyed Summer School more (at least sometimes) while only 22.7% of the teachers and 31.8% of the educational assistants, and 0% of the cadets expressed more enjoyment during the academic year. Class size, planning time, in-service programs, record keeping, teamwork, and pressure were all rated better in Summer School by all teaching groups. Teaching materials were rated worse in Summer School by teachers and educational assistants and available support systems were rated worse in Summer School by teachers. These responses indicated generally positive feelings about the instructional program of Summer School with the possible exception of lack of good teaching materials provided.

An open-ended question requesting suggestions for improvement elicited very strong support for the program and the style in which it operated. The most frequently mentioned suggestions were sending forms to parents earlier in May, sending home emergency cards with acceptance forms, developing a newsletter, providing for more parental involvement, relieving the educational assistants from the pre- and post-testing, providing a set-up day before the session begins, seeking more information from the sending teacher, and allowing use of the media centers at the three sites.

The parental questionnaire responses are shown in Table 6.

Table 6

Parent Questionnaire Responses

Question	Responses		Parents
Which school did you child/ren attend?	Site A		62(37.1%)
	Site B		41(24.6%)
	Site C		62(37.1%)
How many children do you have in the Ann Arbor Elementary Summer School program this year?	1		106(63.5%)
	2		52(31.1%)
	3		6(3.6%)
	4		1(0.6%)
	5		1(0.6%)
How many children did you have enrolled in the Summer School program last year?	0		107(64.1%)
	1		45(26.9%)
	2		14(8.4%)
	4		1(0.6%)
How do you feel about the Summer School program? (Check one of the following.)	I am satisfied		127(76.0%)
	I don't care one way or the other		0(0%)
	I am not satisfied		10(6.0%)
	I don't know very much about the program		24(14.4%)
If there is a Summer School program next year, would you send your child/ren again?	Yes		131(78.4%)
	No		4(0.6%)
	Not sure		28(16.8%)
In terms of scheduling, which do you recommend?	Length	6 weeks	92(55.1%)
		7 weeks	19(11.4%)
		8 weeks	42(25.1%)
	Time	8:30-11:30	19(11.4%)
		8:30-12:00	19(11.4%)
		9:00-12:00	105(62.9%)
		1:00-4:00	3(1.8%)
	Days	M,T,W,Th	136(81.4%)
		M,T,Th,F	2(1.2%)
		T,W,Th,F	5(3.0%)

Table 6

Parent Questionnaire Responses (pg.2)

Question	Responses	Parents
How do you think your child or children feel about Summer School?	S/he really likes it.	103(61.7%)
	S/he thinks it's OK.	46(27.5%)
	S/he somewhat dislikes it.	9(5.4%)
	S/he really hates it.	3(1.8%)
Which of the following apply to your child/ren?	S/he tells me about what goes on in Summer School.	139(83.2%)
	It's hard to get him/her up in time	13(7.8%)
	S/he doesn't seem to take it seriously.	11(6.6%)
	S/he would rather be playing with friends	22(13.2%)
	S/he would rather be taking part in other planned community activities	11(6.6%)
	Other	11(6.6%)
Do you feel your child/ren is/are making gains in reading?	Yes	122(73.1%)
	No	6(3.6%)
	I'm not sure	38(22.8%)
Do you feel your child/ren is/are making gains in math?	Yes	123(73.7%)
	No	2(1.2%)
	I'm not sure	38(22.8%)
Do you think the Summer School program is worthwhile?	Yes	157(94.0%)
	No	0(0%)
	Not sure	7(4.2%)
How do you feel the Summer School compares with school during the regular year?	The children get more individual help in S.S.	123(73.7%)
	There is less pressure in S.S.	97(58.1%)
	S.S. helps my child feel better about him/herself.	66(39.5%)
	S.S. is not worth the trouble	1(0.6%)
	S.S. is too far from home	8(4.8%)

Table 6

Parent Questionnaire Responses

Question	Response	Parents
How do you feel the Summer School compares with school during the regular year?(con't)	There are too many other children in S.S. that my children don't know.	6(3.6%)

(Questionnaires returned: 167(57.6%))

The data indicate parental support and approval for the program. Only 6% expressed dissatisfaction while 76% expressed satisfaction. While 78.4% of the parents would send children another year, only 0.6% would not. None of the parents felt the program was not worthwhile. In comparing Summer School with academic-year school, parents rated Summer School better in individual help (73.7%) and in having less pressure (58.1%). Only 0.6% of the parents felt Summer School was not worth the trouble.

The scheduling of the program was approved by the parents: six-weeks, 9 a.m. - 12 noon, Monday through Thursday. There was some interest (25.1%) in expanding to an eight-week schedule.

When rating their children's progress, 73.1% felt gains were made in reading and 73.7% felt gains were made in mathematics. Only 7.2% of the parents felt their child somewhat disliked or really hated Summer School and 83.2% of the children talked to their parents about what happened at Summer School. Less than 8% of the parents indicated their child exhibited the following negative attitudes about Summer School: hard to get up on time, doesn't seem to take it seriously, or would rather be taking part in other planned community activities.

An open-ended question asking for other suggestions revealed a great deal of satisfaction with the program. Suggestions included more parent-teacher communication and busses stopping closer to home rather than at the academic-year school.

Student performance data. In order to provide information about academic progress of students during Summer School, a pre- and post-testing schedule was developed for all students. To save testing time during the short six-week program, it was agreed that Title I personnel would pre-test Title I students in the academic-year school during May or June and would post-test those students in the academic-year school during September. All non-Title I students were tested during the first and last weeks of Summer School by educational assistants. Most of the educational assistants involved in the testing had been in similar positions in the academic-year Title I program and had been trained to administer tests. Those who had not were given training.

In selecting appropriate tests, the following features were sought: (1) relatively short and easy to administer, (2) a good range of grade level spans in scoring, (3) testing needed for reading and mathematics only, and (4) approval by the Michigan Department of Education for use by Title I programs. Those tests chosen were as follows:

reading, grades 1 and 2 -- Woodcock Reading Mastery Tests (American Guidance Service, Inc.), Letter Identification and Word Identification subtests.

reading, grades 3 through 6 -- Woodcock Reading Mastery Tests, Word Identification and Passage Comprehension subtests.

mathematics, grades 1 through 6 -- Peabody Individual Achievement Test (American Guidance Company).

A summary of the grade equivalent unit differences from pre-testing to post-testing is shown in Table 7.

Table 7

Pre-Test to Post-Test Differences in Grade Equivalent Units

	PIAT (Math)		Woodcock (Reading)					
			Letter ID		Word ID		Passage Comprehension	
	N	%	N	%	N	%	N	%
a. Gain = 1.6 GEU or more	31	12.3	0	0	12	4.6	21	12.7
b. Gain = 1.3 to 1.5 GEU	7	2.8	1	1.0	0	0	10	6.0
c. Gain = 1.0 to 1.2 GEU	18	7.1	5	4.8	6	2.3	21	12.7
d. Gain = 0.7 to 0.9 GEU	36	14.2	2	1.9	15	5.7	22	13.3
e. Gain = 0.4 to 0.6 GEU	30	11.9	22	21.0	24	9.2	31	18.7
f. Gain = 0.1 to 0.3 GEU	42	16.6	26	24.8	102	38.9	31	18.7
g. No gain or regression	89	35.3	49	46.7	103	39.4	30	18.0
Totals	253	100.2	105	100.2	262	100.1	166	100.1

These data indicate that the most dramatic improvements were in Passage Comprehension. At least one month gain was shown by 82% of the students. And 31.4% of the students had a gain of one year or more. These results were quite impressive and seemed to reflect the emphasis the teachers placed on leisure and purpose-related reading and on reading for understanding. The mathematics gains were also quite good. Even though 35.3% of the students had no gain or regressed, 64.7% had an improvement of one month or more and 22.2% had a gain of one year or more. Progress on Word Identification and Letter Identification was not as good as it was for the other two areas. A gain of one month or more was made by 60.6% of the students on Word Identification, but only 6.9% gained one year or more. For Letter Identification, 53.3% gained one month or more and only 5.8% had a gain of a year or more.

Data analysis. In addition to reviewing the pre- and post-test differences for students participating in the program, there were other questions regarding the program which needed answers. Some of these questions would provide more specific input about contributors to score changes. The questions considered were:

1. Do the gain scores indicate that students at all grade levels make adequate improvements during Summer School?
2. How does attendance during Summer School affect student gains?
3. Do Title I students and non-Title I students make similar gains during Summer School?
4. Do students participating in the program for two years show as much academic progress as those attending only one year?
5. Do students less than two grade levels behind show as much progress as those two or more grade levels behind?
6. Do students not attending Summer School maintain their achievement levels as well as those who attended Summer School?

The data have been summarized to provide answers to each of the above questions. Each question and its corresponding data will be presented and discussed.

1. Do the gain scores indicate that students at all grade levels make adequate improvements during Summer School?

Many of the people involved with organizing, developing, teaching, and administering the Summer School program have felt that it may be more advantageous to concentrate on only a few grade levels rather than include six grade levels. It was especially important to consider whether sixth graders were making adequate progress since the enrollment at that grade level has been somewhat lower than the other grade levels. In addition, teachers have indicated that these students seem less motivated during the summer primarily because they see themselves as junior high school students and no longer wish to be part of an elementary school program.

Tables 8-11 show the pre- to post-test grade equivalent gains for the four test areas by grade level.

Table 8

Pre- to Post-Test Grade Equivalent Unit Differences in Percentages by Grade Level for Mathematics (Peabody Individual Achievement Test)

	Grades					
	1	2	3	4	5	6
a. Gain = 1.6 GEU or more	1.9	10.3	3.0	18.4	28.6	8.3
b. Gain = 1.3 to 1.5 GEU	1.9	1.7	0	5.3	4.8	4.2
c. Gain = 1.0 to 1.2 GEU	5.8	6.9	12.5	7.9	7.1	4.2
d. Gain = 0.7 to 0.9 GEU	11.5	17.2	18.8	7.9	11.9	25.0
e. Gain = 0.4 to 0.6 GEU	13.5	12.1	12.5	18.4	9.5	4.2
f. Gain = 0.1 to 0.3 GEU	25.0	20.7	21.9	7.9	7.1	8.3
g. No gain or regression	40.4	30.9	31.2	34.1	31.1	45.8
Totals	100.0	99.8	99.9	99.9	100.1	100.0
N	52	58	32	38	42	24

Table 9

Pre- to Post-Test Grade Equivalent Unit Differences in Percentages by Grade Level for Letter Identification (Woodcock Reading Mastery Tests)

	Grades					
	1	2	3	4	5	6
a. Gain = 1.6 GEU or more	0	0	0	0	0	0
b. Gain = 1.3 to 1.5 GEU	0	1.8	0	0	0	0
c. Gain = 1.0 to 1.2 GEU	0	9.1	0	0	0	0
d. Gain = 0.7 to 0.9 GEU	0	3.6	0	0	0	0
e. Gain = 0.4 to 0.6 GEU	20.0	21.8	0	0	0	0
f. Gain = 0.1 to 0.3 GEU	30.0	20.0	0	0	0	0
g. No gain or regression	50.0	43.6	0	0	0	0
Totals	100.0	99.9	0	0	0	0
N	50	55	0	0	0	0

Table 10

Pre- to Post-Test Grade Equivalent Unit Differences in Percentages by Grade Level for Word Identification (Woodcock Reading Mastery Tests)

	Grades					
	1	2	3	4	5	6
a. Gain = 1.6 GEU or more	0	7.0	2.5	2.1	9.8	9.5
b. Gain = 1.3 to 1.5 GEU	0	0	0	0	0	0
c. Gain = 1.0 to 1.2 GEU	0	1.8	2.5	4.3	2.4	4.8
d. Gain = 0.7 to 0.9 GEU	2.1	7.0	10.0	6.4	7.3	0
e. Gain = 0.4 to 0.6 GEU	2.1	3.5	17.5	12.8	12.2	4.8
f. Gain = 0.1 to 0.3 GEU	37.5	38.6	42.5	31.9	34.1	57.1
g. No gain or regression	58.4	42.1	25.0	42.5	34.0	23.8
Totals	100.1	100.0	100.0	100.0	99.8	100.0
N	48	57	40	47	41	21

Table 11

Pre- to Post-Test Grade Equivalent Unit Differences in Percentages by Grade Level for Passage Comprehension (Woodcock Reading Mastery Tests)

	Grades					
	1	2	3	4	5	6
a. Gain = 1.6 GEU or more	0	0	5.0	8.7	25.6	19.0
b. Gain = 1.3 to 1.5 GEU	0	0	7.5	8.7	2.3	4.8
c. Gain = 1.0 to 1.2 GEU	0	0	7.5	4.3	20.9	19.0
d. Gain = 0.7 to 0.9 GEU	0	0	12.5	17.4	7.0	14.3
e. Gain = 0.4 to 0.6 GEU	0	0	22.5	19.6	14.0	23.8
f. Gain = 0.1 to 0.3 GEU	0	0	27.5	10.9	23.3	4.8
g. No gain or regression	0	0	17.5	30.4	7.0	14.4
Totals	0	0	100.0	100.0	100.1	100.1
N	0	0	40	46	43	21

In mathematics the no gain or regression levels for sixth grade and first grade were 45.8% and 40.4% respectively. These were somewhat higher than similar figures for the other grade levels which were between 30.9% and 34.1%. Gains of one grade equivalent unit or more were scored by 40.5% of the fifth graders and 31.6% of the fourth graders. Only 9.6% of the first graders and 16.7% of the sixth graders made such gains.

Letter identification tests were only administered at grades one and two. At first grade, 50% of the students had no gain or regression compared to 43.6% of the second graders. No first graders had a gain of .7 grade equivalent units or more while 14.5% of the second graders did.

No gain or regression levels for word identification were highest at grades one (58.4%), four (42.5%), and two (42.1%). Gains of 1.0 grade equivalent units or more were highest for grades six (14.3%) and five (12.2%). No first graders had gains of 1.0 grade equivalent units or more.

Passage comprehension tests were administered at grades three through six. The no gain or regression levels at each grade level were the lowest of all tests administered, ranging from 30.4% at grade four to 7.0% at grade five. Gains of 1.0 grade equivalent units or more were high at all four grade levels and particularly at grades five (48.8%) and six (42.8%).

These data indicate that students in grades one and six had the least mathematics gains. Gains for letter identification (grades one and two only) were the least impressive of all four test areas. Word identification gains were least for first graders. Passage comprehension gains were the most impressive of all four test areas, especially in grades five and six. While the mathematics increases were not particularly strong for sixth graders, the impressive gains in passage comprehension indicate that sixth graders do make adequate gains to justify their inclusion in the program, at least for reading. What these data show is that if any grade level is to be dropped from the program it probably should be grade one.

2. How does attendance during Summer School affect student gains?

Attendance has been an important aspect of the program for the past two years. Parents were required to agree that they would see to it that their child attended regularly. Careful records of attendance were kept and a great deal of effort was put into following up on absences. In a short term program such as this it seemed that attendance should be an important consideration. However, it was desirous to examine the achievement data to determine if such effort in this area was actually justified.

Table 12 shows the grade equivalent unit differences for all four test areas. The no gain or regression levels were lower in each test area for those students absent two days or less. And the gains of 1.0 grade equivalent units or more were higher in each test area for those students absent two days or less. However, it should be noted that the differences between the two groups were not particularly large. While those with good attendance did score somewhat better, the differences were not as impressive as one might have thought given the energies expended encouraging regular attendance.

Table 12

Pre- to Post-Test Grade Equivalent Unit Differences in Percentages by Number of Days in Attendance for Mathematics, Letter Identification, Word Identification, and Passage Comprehension

	Mathematics		Letter Identification		Word Identification		Passage Comprehension	
	20-22 Days	1-19 Days	20-22 Days	1-19 Days	20-22 Days	1-19 Days	20-22 Days	1-19 Days
a. Gain = 1.6 GEU or more	18.4	8.4	0	0	5.0	4.3	14.5	11.5
b. Gain = 1.3 to 1.5 GEU	3.1	1.9	2.4	0	0	0	6.5	5.8
c. Gain = 1.0 to 1.2 GEU	5.1	8.4	4.8	4.8	3.0	1.9	11.3	13.5
d. Gain = 0.7 to 0.9 GEU	17.3	12.3	2.4	1.6	8.9	3.7	8.1	16.3
e. Gain = 0.4 to 0.6 GEU	11.2	12.3	19.0	22.2	8.9	9.3	21.0	17.3
f. Gain = 0.1 to 0.3 GEU	14.3	18.2	33.3	19.0	39.6	38.5	25.8	14.4
g. No gain or regression	30.6	38.1	38.1	52.5	34.7	42.1	12.8	21.1
Totals	100.0	99.6	100.0	100.1	100.1	99.8	100.0	99.9
N	98	154	42	63	101	161	62	104

3. Do Title I students and non-Title I students make similar gains during Summer School?

The budget for Summer School is provided by general funds (60.7%) and by Title I funds (39.3%). Student participation in the program was to approximate this funding level (approximately 40% Title I students). It was important to know if similar gains were being shown by each group in order to determine if the program should continue using the 1978 model.

The data for Title I and non-Title I students are shown for all four test areas in Table 13 The percentage of no gain or regression is higher on all tests for the Title I students. Except for letter identification these differences greatly favor the non-Title I students. Gains of 1.0 grade equivalent units or more are similarly much greater for non-Title I students than for Title I students. These data indicate that gains were much greater for non-Title I students than for Title I students. However, before drawing any conclusions from these data a couple of facts should be noted. First, the testing schedules were different for these two groups. Title I students were pre-tested in May and post-tested in September as part of the on-going Title I pupil assessment program. The testing for non-Title I students took place during the first and last weeks of the Summer School session. Secondly, it must be remembered that the Title I students had been receiving individual attention and instruction daily throughout the school year as part of the Title I program and the non-Title I students had not. For this reason it may be that the non-Title I students should be expected to show greater gains during Summer School when receiving more individual instruction and attention than is possible during the school year. For these reasons it does not seem that there is sufficient justification for significantly altering the 1978 model. Incorporating a similar testing schedule for all students involved during future years would give greater credibility to data such as these and could provide a better basis on which to consider changes in the Summer School model.

4. Do students participating in the program for two years show as much academic progress as those attending only one year?

Because of the limited number of spaces in a program such as this, it is important to know if students participating for two summers make as much academic progress as those participating only one year. Such information would aid in setting priorities for pupil selection.

The t-tests for each of the four areas tested are shown in Table 14. For three of the tested areas (mathematics, letter identification, and word identification) the mean gain score for those attending only one year is greater than the mean gain score for those attending two years. However, the differences are only significant for letter identification (.0092). For passage comprehension the mean gain score for those attending two years is greater than the mean gain score for those attending only one year. The significance for that difference was .0502.

These data give mixed information regarding the comparison of achievement gains for two-year and one-year students. It appears that a second year of attendance would be particularly desirable for those students needing work in passage comprehension and would be less desirable for those students needing work in letter identification.

Table 13

Pre- to Post-Test Grade Equivalent Unit Differences in Percentages by Title I and Non-Title I Designation for Mathematics, Letter Identification, Word Identification, and Passage Comprehension

	Mathematics		Letter Identification		Word Identification		Passage Comprehension	
	Title I	Non-Title I	Title I	Non-Title I	Title I	Non-Title I	Title I	Non-Title I
a. Gain = 1.6 GEU or more	4.8	17.4	0	0	0.9	7.2	7.7	15.8
b. Gain = 1.3 to 1.5 GEU	1.9	3.4	0	1.8	0	0	1.5	8.9
c. Gain = 1.0 to 1.2 GEU	4.8	8.7	4.2	5.3	0	3.9	10.8	13.9
d. Gain = 0.7 to 0.9 GEU	9.6	17.4	2.1	1.8	4.5	6.6	10.8	14.9
e. Gain = 0.4 to 0.6 GEU	11.5	12.1	25.0	17.5	5.5	11.8	21.5	16.8
f. Gain = 0.1 to 0.3 GEU	18.3	15.4	18.8	29.8	35.5	41.4	23.1	15.8
g. No gain or regression	49.1	25.6	50.2	43.9	53.6	29.0	24.6	13.9
Totals	100.0	100.0	100.3	100.1	100.0	99.9	100.0	100.0
N	104	149	48	57	110	152	65	101

Table 14

T-Tests on Achievement Differences of Students Attending One Year and Students Attending Two Years

	Mathematics		Letter Identification		Word Identification		Passage Comprehension	
	Two Years	One Year	Two Years	One Year	Two Years	One Year	Two Years	One Year
Mean	.27941	.54625	-.28571	.25000	.21842	.40179	.59032	.19355
Variance	1.6168	1.0824	.37810	.22255	.19560	2.0397	1.3602	.91492
N	34	160	7	48	38	168	31	124
T	-1.3040		-2.7019		-.78169		1.9737	
DF	192		53		204		153	
Significance	.1938		.0092		.4353		.0502	

5. Do students less than two grade levels behind show as much progress as those two or more grade levels behind?

In selecting students for this program priority was given to students having deficiencies of two grade levels or more. It is important to know if this selection criterion is justified.

The statistical information for this comparison is shown in Table 15. For all three tested areas, the mean gain score for the students two or more grade levels deficient is higher than the mean gain score for the students less than two grade levels deficient. The t-test does not show significant differences in any of the three areas. (Letter identification could not be tested since only first and second graders took that test and it was not possible to be two or more grade levels deficient.)

These data indicate that those students two or more grade levels deficient do show more gain score improvement than those students less than two grade levels deficient and, thus, the priority for these students is justified. However, the lack of statistical significance in these data indicates that students less than two grade levels deficient should continue to be included in the program.

6. Do students not attending Summer School maintain their achievement levels as well as those who attended Summer School?

Many students actually have achievement regression during the summer months. This may be especially true for students already behind in achievement. Some of these students come from home situations where there may be little intellectual stimulation during the summer and some may be so negative about school that they would avoid any intellectual activity during the summer. Even if students do not gain during Summer School, if their regression level can be reduced the summer program may be justified.

The only students for whom the Ann Arbor Public Schools have similar test data to those in Summer School are the Title I students. The scores for students from one elementary school were compared for Title I students attending Summer School and for Title I students not attending Summer School. Table 16 summarizes these data.

Although the average gains for these students were actually regressions in six cases, the two areas showing gains were for students who attended Summer School. In each of the four comparisons students attending Summer School had better gains or less regression than students not attending Summer School.

These data indicate that Summer School does decrease regression as well as increase achievement. However, using the students from only one school is not enough to have a firm basis for drawing conclusions. With this tentative indication that Summer School may be important in decreasing regression as well as increasing achievement, further study of this area should be undertaken as part of the next summer program.

IV. Summary, Conclusions and Recommendations

As taxpayer revolts and declining pupil enrollments cause school budgets to become more difficult to balance, many "non-essential" programs are coming

Table 15

T-Tests on Achievement Differences of Students Two or More Grade Levels Deficient in Achievement and Students Less than Two Grade Levels Deficient in Achievement

	Mathematics		Word Identification		Passage Comprehension	
	Two or More Grade Levels Deficient	Less than Two Grade Levels Deficient	Two or More Grade Levels Deficient	Less than Two Grade Levels Deficient	Two or More Grade Levels Deficient	Less than Two Grade Levels Deficient
Mean	.67333	.49717	.51951	.20597	.34000	.23118
Variance	.82202	1.4355	2.9806	.91815	.33800	1.4854
N	30	106	82	67	55	93
T	.74633		1.3283		.62105	
DF	134		147		146	
Significance	.4568		.1862		.5355	

Table 16

Comparison of Gain Scores for Building X Title I Students Attending Summer School and Not Attending Summer School

	Attended Summer School	Did Not Attend Summer School
Mathematics -- Total Gain	-3.7	-8.7
Number of Students	15	15
Average Gain	-.24	-.58
Letter Identification -- Total Gain	-2.8	-2.1
Number of Students	7	5
Average Gain	-.40	-.42
Word Identification -- Total Gain	+.1	-7.0
Number of Students	12	21
Average Gain	+.01	-.33
Passage Comprehension -- Total Gain	+.1	-5.5
Number of Students	5	13
Average Gain	+.02	-.43

under close scrutiny by administrators and boards of education. Included in such "non-essential" programs are remedial summer activities. This paper has provided a description and evaluation of one such successful summer program which has been maintained despite the budget cuts.

During the summer of 1977 and 1978 the Ann Arbor Public Schools have conducted an elementary summer school program for the purpose of providing remedial instruction for students two or more grade levels deficient in reading and/or mathematics achievement. This paper described a follow-up study of those two summers to ascertain the effectiveness of the program and to recommend modifications for improvement.

Students from all 26 public elementary schools and from the parochial schools in the district were eligible for the program, but first priority was given to students who had been receiving Title I services during the regular instructional year. General funds provided 60% of the $56,000 budget and Title I monies provided 40%. The program was designed to include 378 students. Each of the 23 classrooms was established with 15-17 students, a certified teacher, an educational assistant, and a cadet.

Students were recommended for the program by classroom teachers, principals, consulting teachers, and language arts consultants. Testing results were used to show students as two or more grade levels behind in achievement. In addition, parental permission was necessary and regular attendance was mandatory. Over 700 students requested placement in the program. A priority system was established for selection using the above-mentioned criteria. Students were in attendance from 9 a.m. until 12 noon, four days each week for six weeks. The fifth morning each week was used for staff meetings, report writing, parent conferences, and planning. The major elements of the program were:

1. small teacher/pupil ratio to provide much individual attention.

2. relaxed atmosphere to make the experience more pleasurable and to keep attendance high.

3. learning activities carefully selected to meet individual needs and to provide high motivation and interest levels.

4. frequent diagnosis of pupil instructional needs using pre-testing information and informal diagnostic measures.

5. varied activities and frequent change of activities to maintain pupil attention and interest in work being presented.

Evaluative questionnaires completed by the teaching staff, the non-teaching staff, the parents, and the students at the end of the program provided general acceptance and positive responses about Summer School. No major changes were suggested as a result of these data and continuance of the program in 1979 was strongly supported.

Pre- and post-test differences indicated that a majority of students had achievement gains as a result of the program. Particularly strong score gains were shown in passage comprehension. The lowest gain scores were shown by first graders. Students absent two days or less had greater gains than those ab-

sent more than two days. Title I students did not have as impressive gains as non-Title I students. Further testing is needed to validate this result. Students who attended two years had particularly good gains in passage comprehension. Although those students two or more grade levels deficient made greater gains than those students less than two grade levels deficient, a lack of statistical significance indicated that students less than two grade levels deficient do gain from the program and should be included. There was a preliminary indication that students attending Summer School have achievement gains or less regression than students not attending Summer School.

This paper has described a successful Summer School program which could provide a model for other school districts. The major components of the program were described above. Although minor changes have been made in the model since its inception, the data presented here have supported the model for future use. The Ann Arbor Public Schools have been quite pleased with the program and would recommend its adoption by other districts.